have been reported by Sanford and co-workers.[8] That the acute gastric erosion need not necessarily be associated with pneumonia is shown by the case here reported and by others.[1, 2, 4, 7, 10] Although the great majority of patients who have gastric hemorrhage due to acute erosion respond favorably to conservative therapy, fatalities have been reported.[4, 10] It is also of interest that the patients who have this lesion do not seem to have the personality typical of the chronic peptic ulcer patient.[7]

It is our opinion that operative intervention, limited to such procedure as will accomplish arrest of the bleeding, is life-saving in properly selected cases, notably those in which the patients have repeated massive hemorrhage despite conservative therapy. In such instances, it will be necessary to open the stomach in order to demonstrate the acute erosion. Obviously such operative intervention will not prevent the occurrence of subsequent erosion. Proper treatment and/or prevention of this lesion must await some knowledge of its cause.

490 Post Street, San Francisco.

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Fracture of the Ribs by Muscular Action Other Than Coughing or Sneezing

A. WAXMAN, M.D., and H. GESHELIN, M.D., *Los Angeles*

FRACTURE of the ribs is usually described as a result of direct violence, such as falls or blows.[7, 9] In such cases the rib is usually fractured at the site of trauma. In fractures caused by bending and compressions such as an anteroposterior squeeze, the ribs are usually fractured at the junction of their posterior and lateral curves.[1, 9] The injury may be bilateral and may occur in one or more ribs. Fracture of the ribs may be due to pathological and certain other general conditions predisposing to fractures, such as old age, insanity and general wasting diseases.[1] Fracture by muscular action is considered a stress and fatigue fracture similar to the march fractures found in service men undergoing unusual physical exercise.[1, 2] Rib fractures have been reported from simple muscular strains and violent sneezing.[3, 5] Coughing may be responsible especially in severe tracheitis, in pertussis, in pneumonia, in tuberculosis, and in whooping cough. The injury sometimes occurs from the muscular effort of lifting heavy loads, from the strains of parturition and even from the exercises of golf.[4] It may also occur while straining at stool or vomiting.

Cases attributed to sudden and undue muscular strain as in lifting heavy objects are very few in number. Kleiner,[4] in 1924, reviewing the literature, found 56 cases of ribs fractured by muscular action, two of which were in the first rib, while in the rest of the series the fracture was in the lower six ribs. In only 13 of these 56 cases was the fracture caused by violent or sudden muscular action other than coughing. Kleiner added the report of a case in which a man fractured the right third rib while unloading large flagstones. Alderson,[1] in 1944, reported 35 cases of stress fractures of the first rib following "unaccustomed and strenuous exertion." In 1947 the authors of this presentation reported a case of fracture of the first rib due to muscular pull.[8] In the following three cases fracture resulted from sudden muscular action.

CASE REPORTS

CASE 1.—A meat cutter, 52 years of age, slipped on a wet floor. He did not fall to the floor but, in breaking his fall, twisted his body and felt something snap in the right side of his chest. Roentgenograms taken on the day of the injury showed fracture of the right fifth rib anteriorly near the axillary region. The fracture healed.

CASE 2.—A bartender, 58 years of age, while lifting a heavy beer keg felt sudden sharp pain in the right side of the chest. Roentgenograms taken the following day showed fracture of the right eighth rib posterior to the angle. The patient was discharged clinically cured a month later.

CASE 3.—A carpenter, 52 years of age, while pulling hard with his left hand in hanging a door, felt something "click" in the left side of the chest. Roentgenograms five days later showed fracture of the anterior extremity of the left sixth rib with fragments in good position. The patient received treatment for one week and then did not return for further treatment.

The length of the first two and the last two ribs protects them, and because of this protection most fractures due to muscular action occur in the middle ribs, the fourth to the eighth. Fractures of this type rarely occur in children due to the elasticity of the ribs. The average age of individuals suffering fracture of the ribs is over 40 years. About 77 per cent of such occur in males because of exposure and occupations.[7] The fracture is usually of the linear type without displacement and healing takes place without complications. Oechsli[6] is of the opinion that the fractures are probably due to the opposing forces of the obliquus externus abdominis and the serratus anterior muscle.

SUMMARY

Fracture of the ribs due to muscular action as in coughing is of frequent occurrence.

Fracture of ribs due to muscular action other than coughing or sneezing is relatively less frequent.

Three cases are reported of fracture of ribs due to sudden muscular action as in lifting or straining.

810 South Spring Street.

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Thromboangiitis Obliterans in a Woman: Factor of a Mild Electric Shock in Initiating Gangrene

ROY J. POPKIN, M.D., *Los Angeles*

ALTHOUGH the reason cannot be satisfactorily explained, thromboangiitis obliterans (Buerger's disease) in women[1] is rare. Other peculiarities of this disease are its rarity in Negroes,[2, 4] its rare association with diabetes mellitus[6] and its relative preponderance in individuals of Jewish ancestry.[3, 8]

Silbert[5] in reviewing his own series of 1,400 cases of thromboangiitis obliterans found only 12 cases clinically diagnosed in women. The Mayo clinic group[1] in a survey of the literature in 1946 found only 20 reported cases in women, with only four of the 20 proven by microscopic section. Eight were typical cases and eight were apparently not thromboangiitis obliterans. Davis and King[4] reported the only proven case in a Negro woman.

In the diagnosis of thromboangiitis obliterans, care must be taken to exclude the instances of peripheral vascular disease due to phlebitis, embolism, polycythemia and ergot poisoning, and of arteriosclerosis or arteritis due to other causes such as syphilis, periarteritis nodosa, disseminated lupus erythematosus and disseminated arteritis. In arriving at a diagnosis of thromboangiitis in a woman, it should be established that she is a smoker of tobacco, and the following features should be present:

1. Evidence of organic occlusion of the large arteries of the extremities.
2. Onset of symptoms relatively early in adult life.
3. Involvement of arteries in both upper and lower extremities.
4. Absence of demonstrable arteriosclerosis, diabetes mellitus and other causes of peripheral vascular disease.

The following report of a case is submitted not only because of its occurrence in a woman but because of the unusual exciting agent which apparently precipitated the gangrenous process.

REPORT OF A CASE

A white married woman, aged 34, of Dutch-English ancestry, ten years previously had first experienced intermittent aching pains in the fingers of the hand upon exposure to cold, associated with color changes of pallor, blueness and redness. These symptoms gradually increased in severity. Early in 1945 she visited a clinic in the East where Raynaud's disease was diagnosed. Eighteen months before the present illness, pains upon exposure to cold appeared in the toes of the feet, and mild intermittent claudication was felt in both legs upon walking two to three blocks at a normal gait. The patient said she had smoked a minimum of one package of cigarettes daily for many years. There was no history of injury to an extremity or of arthritis, diabetes mellitus, lues, or other contributory disease, and the patient said she had never had thrombophlebitis. There was nothing indicative in the family history.

Present illness: The patient, a telephone switchboard operator, while pulling cords from the switchboard felt pain in the distal portions of the second and third fingers of the left hand, as if strands of wire had pierced the skin. After a few days she reported for medical care. The examining physician's findings one week after the injury were a puncture wound of the fat pad of the left index finger and cellulitis. A wet dressing was applied and the finger was immobilized with a splint. The puncture wound continued to drain, and penicillin was administered daily. The condition remained subacute for the next two months, although the adjacent middle finger became involved in the inflammatory process. Conservative treatment was continued until approximately ten weeks after the initial complaint, when the patient was hospitalized, and an amputation was performed through the proximal phalanges of the index and middle fingers. Healing was satisfactory. The pathologist's report of the microscopic sections (Figures 1 and 2) was: Obliterating endarteritis of the small blood vessels. Some of these were completely obliterated. There was some perivascular infiltration of the ground cells. Diagnosis: Thromboangiitis obliterans.

The results of general physical examination, including all indicated laboratory tests, were essentially negative. There was no evidence of scleroderma, scalenus anticus syndrome or cervical rib. Peripheral arterial pulsations recorded a week before amputation were as follows: The radials and posterior tibial artery pulsations were palpable,

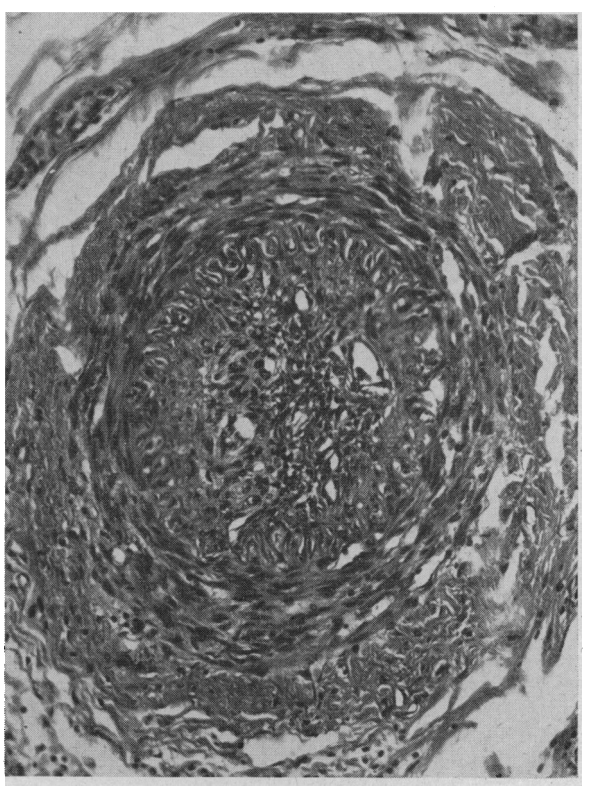

Figure 1.—Digital artery (x 200). This closely resembles Figure 95, "Old healed stage in small artery," in Buerger's text, "The Circulatory Disturbances of the Extremities," p. 343.